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# CHAPTER 3

## HUMAN POPULATION

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**Human population** has been selected as the theme of the third chapter of this volume on Environmental Education because it is timely, provocative, and of universal importance. "Of all the issues we face as the new millennium nears, none is more important than population growth. The numbers speak for themselves" (Swerdlow, 1998, p. 4). In October 1999 the world's population reached 6 billion, and that number is growing by almost 90 million people a year.

The introductory lesson described here is designed as a starting point for teachers interested in introducing the topic of human population to their students. By reading about and discussing the topic of human population, students increase their awareness of population issues. They also learn new vocabulary and concepts associated with the topic, and they practice language skills in a meaningful way.

The lesson opens with a short "World Population Quiz." Next, students read and discuss an article describing some major issues related to population and the environment. The lesson continues with a whole-class discussion in which students share their personal views on population issues. Finally, students write a brief summary of what they have learned in the lesson. Some teachers will want to use the proposed activities as a single 50-minute lesson. Others may choose to combine some or all the activities with other materials to create a larger teaching unit.



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### BACKGROUND INFORMATION

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On October 12, 1999, the United Nations declared that Earth's population had reached 6 billion. Of these 6 billion people, more than one-third live in either one or the other of two countries: India with its population of 1 billion, or China with its population of 1.2 billion.

World population first reached one billion in the year 1804. It took 123 years to reach go from one to two billion, but it took only 12 years to go from five to six billion. Since 1950 the population growth rates of the **less developed countries** have risen very rapidly, and they are now much higher than those of the **more developed countries**. As a result, most population growth in the past 50 years has been in the poorer areas of the world. Today 98 percent of population growth occurs in the less developed countries, where the benefits of health care, education, **family planning**, and economic opportunities are least available.

At first glance the effects of population growth on the environment seem obvious. More people use more resources, damage more of the earth, and create more pollution. As the population of a country increases, so does its **consumption**. Because of this, we might expect the poorer nations, which have the highest populations and the fastest rates of population growth, to cause the most damage to the environment. The truth is more complicated than that.

The greatest danger to the environment comes not just from poor people in developing countries who damage their resources in order to find food and housing. An equally big danger comes from the richest people, who use the most resources and create the most pollution. In addition, there are all the other people in between who increase their consumption as they try to improve their **standard of living**.

Reducing population growth rates does not solve all population problems. At the beginning of the 20th century, most of the world's people lived in the countryside. Today nearly half of them live in cities, and the fastest growing cities are in the less developed countries. As more people move to the cities, they use more resources and create more pollution. What other environmental problems could occur as more and more people crowd into cities?



## CLASSROOM APPLICATIONS

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### PRELIMINARY LESSON PLANNING

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#### **Materials Preparation:**

- Duplicate enough copies of the World Population Quiz in [Appendix A](#) to give one to each student.
- Duplicate enough copies of the article Population and the Environment in [Appendix B](#) to give one to each student.
- Duplicate enough copies of the Focus Questions in [Appendix C](#) to give one to each pair of students (or write the questions on the board or an overhead projector).

#### **Vocabulary Considerations:**

Before using the World Population Quiz and the article Population and the Environment, consider what vocabulary that students will need to know to carry out the lesson successfully. Determine which vocabulary items the students already familiar with and which items will be new for them. Some important terms, and their definitions, are included in the [glossary](#).



### ACTIVITY #1 (APPROXIMATELY 10 MINUTES)

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#### **Purpose:**

- To introduce and increase awareness of human population issues
- To provide an opportunity for students to assess their own prior knowledge of population issues
- To practice reading
- To stimulate discussion

#### **Procedure:**

1. Divide the class into pairs and distribute the World Population Quiz.
2. Explain to the students that they are going to take a quiz to find out what they already know about world population. Tell them that they will not be graded on the quiz. The purpose of the quiz is to let them find out for themselves what they already know about the subject of world population.
3. Make sure that the students understand the questions.
4. Students work in pairs, discussing the questions and marking their answers.
5. After the pair work, student volunteers take turns reporting their answers to the class. As volunteers report, write their answers on the board. If students disagree, ask them to report their answers to the question at hand. Do not indicate at this stage whether the students' answers are right or wrong.

- 6.
7. After students have reported their answers to all ten questions on the quiz, read off the correct answers to the class. (Answers to the World Population Quiz are provided in the Answer Key in [Appendix D.](#))
8. Ask the class the following questions, and allow student volunteers to give their answers:
  - a. Did any of the questions on the quiz surprise you? Which ones?



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## ACTIVITY #2 (APPROXIMATELY 15 MINUTES)

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### **Purpose:**

- To increase students' knowledge about world population issues
- To give students the opportunity to learn and use key vocabulary and concepts associated with the topic of world population.
- To practice reading
- To practice note taking

### **Procedure:**

1. Explain to the class that they are going to continue working in pairs. Distribute one copy of the article Population and the Environment to each student.
2. Distribute one copy of the Focus Questions to each pair or students (or write the questions on the board or an overhead projector).
3. Tell the students to read the article, and then discuss it with their partners, asking and answering the Focus Questions with their partners.
4. After pairs have read the article and discussed it with their partners, have student volunteers take turns reading and answering the Focus Questions. (Answers to the Focus Questions are provided in the Answer Key in [Appendix D.](#))



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## ACTIVITY #3 (APPROXIMATELY 15 MINUTES)

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### **Purpose:**

- To allow students to express their personal views on issues related to population growth
- To reinforce key concepts and vocabulary associated with the theme of population growth
- To provide an opportunity for students to practice listening and speaking skills in a meaningful way

### **Procedure:**

1. Tell the students that they are going to have a class discussion and that they should use their own background knowledge and opinions, along with what they have learned from the quiz and the article, to answer the questions.

2. Conduct a whole-class discussion centering on some or all of the following questions:
- What do you think life will be like when the world's population is double what it is today?
  - In your opinion is world population growth a "problem"? Why or why not?
  - Do you think population growth in your own country is a problem? Why or why not?
  - Why do some people believe that big families are important?
  - What are some ways of reducing population growth?
  - What do you think is the best solution to overpopulation?
  - In your opinion, should governments be able to pass laws about the number of children allowed in each family? Why or why not?



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### COOL DOWN ACTIVITY (APPROXIMATELY 10 MINUTES)

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**Purpose:**

- To conclude the lesson
- To give students an opportunity to reflect on and assess what they have learned in the lesson.
- To practice writing

**Procedure:**

1. Ask students to write a few sentences summarizing what they have learned in today's lesson.
2. Allow students 5 minutes or so to write their sentences.
3. After students have written their sentences, ask for volunteers to read their sentences aloud to the class.



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### EXTENSIONS

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1. Have students work in pairs or small groups, drawing up a list of questions they have about the topic of human population. The questions can form the basis for project work or research.
2. Have students (in pairs or individually) select a highly populated country as a subject for a short report. Each student (or pair of students) researches the following information about the chosen country:
  - What is the life expectancy at birth?
  - What is the adult literacy rate?
  - What might be contributing to the high population of the country? Government policies? The country's social structure? Its economic situation? Something else?
  - In your opinion, is the high population of this country a "problem"? Why or why not?

3. Have students write a one-page reaction to the following quotation:

"We need that size of population in which human beings can fulfill their potentialities; in my opinion we are already overpopulated from that point of view, not just in places like India and China and Puerto Rico, but also in the United States and Western Europe." (George Wald, 1967 Nobel Laureate in Medicine)

4. Have students survey eight to ten people to learn their opinions on the following question: *Do you think world population growth is a serious problem? Why or why not?* Ask students to write a one-page summary of the responses they receive, and to be prepared to tell the class what they learned from the people that they interviewed.
5. Ask students to research how the population of their local community has changed over the last 100 years. Have them make a graph to illustrate the shifts (increases or decreases) in the community's population and determine the reasons for those shifts.
6. Ask students to imagine what it would be like if suddenly there were twice as many people living in their home as there are now. Have them write a paragraph explaining how their lives would be different, and how they would feel about living in such crowded conditions.

Refer to the [Internet Resources](#) section for more information and lesson planning ideas.

## World Population Quiz

1. What is the current population of the world?
  - a. about four billion
  - b. about five billion
  - c. about six billion
  - d. about seven billion
2. When did the world population first reach one billion?
  - a. about 300 B.C.
  - b. about 1200 A.D.
  - c. about 1650 A.D.
  - d. about 1800 A.D.
3. In what year did the world population reach two billion?
  - a. about 1250
  - b. about 1650
  - c. about 1830
  - d. about 1930
4. How long did it take for the world population to go from two billion to three billion?
  - a. 30 years
  - b. 60 years
  - c. 120 years
  - d. 240 years
5. Each year the world population increases by:
  - a. 25 million people
  - b. 66 million people
  - c. 92 million people
  - d. 131 million people
6. At current rates, what will the world population be in the year 2050?
  - a. almost 11 billion
  - b. a little more than billion
  - c. a little more than 6 billion
  - d. almost 8 billion

7. The two most **populous** countries in the world are:
- a. The United States and Mexico
  - b. China and India
  - c. Mexico and India
  - d. China and the United States
8. On which continent is population growth the fastest?
- a. Africa
  - b. Asia
  - c. Europe
  - d. South America
9. What percentage of the world population lives in less developed countries?
- a. 26 percent
  - b. 53 percent
  - c. 64 percent
  - d. 77 percent
10. How many people in the world do not have enough clean drinking water?
- a. Almost everyone has enough clean drinking water.
  - b. 710 million
  - c. 1.6 billion
  - d. 2.1 billion

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### Population and the Environment

In 1999 the world's population reached six billion, and it is growing faster than ever before. Every three years, **global** population grows by about 270 million. This is the same as adding the whole population of the United States, the third largest country, every three years. If **current** rates continue, the world's population will double in less than 50 years.

#### Births and Deaths

Population is increasing rapidly because of the drop in **death rates**. Before World War II, both death rates and **birthrates** were high in developing countries. Around 1950, better health care and **sanitation** caused death rates to fall rapidly. At the same time birthrates remained high.

#### Population Problems

Most population growth is in the developing countries of Asia, Africa, and Latin America. Many of these countries do not have enough **resources** to support their growing populations. Most poor people in these countries live in **rural** areas. Many of these people have to **struggle** to fill the basic needs of food, clean water, and homes.

#### Land and Population Growth

As population grows, land is cleared for people. As land is cleared, **wildlife** and their **habitats** disappear, usually forever. The world's rain forests are disappearing at a rate of 100 acres (40 hectares) a minute. Asia has the highest rate of **deforestation**. Rates in Latin America and Africa are almost as high. Population growth is also responsible for the loss of farmland all over the world.

#### Reducing Population Growth

Many experts believe population growth needs to be controlled. Some say the best way to do this is to make sure the world's poor people can feed and care for themselves. They say better **family planning** will help couples to have fewer children. To produce more food, they say these countries should replace cash **crops** with food crops. Cash crops, such as tobacco, tea, and coffee, do not feed the local people. Farmers grow cash crops to sell to developed countries.

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## APPENDIX C

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### Focus Questions

1. In what year did the world's population reach 6 billion?
2. How many new people are added to the Earth each year?
3. How long will it take for world population to reach 12 billion?
4. What is the reason for the rapid increase in world population?
5. What caused death rates to fall around 1950?
6. In what parts of the world does most population growth occur?
7. Do most of the world's poor people live in cities?
8. What are some problems these poor people have?
9. In what ways does population growth affect land?
10. What do many experts say is the best way to control population growth?

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## APPENDIX D

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### Answer Key

#### WORLD POPULATION QUIZ

1. c; 2. d; 3. d; 4. a; 5. d; 6. a; 7. b; 8. a; 9. d; 10. c

#### FOCUS QUESTIONS

1. 1999

2. 90 million

3. Less than 50 years

4. The drop in death rates

5. Better health care and sanitation

6. In the developing countries of Asia, Africa, and Latin America

7. No. Most poor people live in rural areas.

8. Not enough food, clean water, or housing

9. As population grows, people clear more of the land for their own use. As land is cleared, wildlife disappears. Population growth also causes the loss of farmland.

10. By making sure poor people can feed and care for themselves (by means of family planning and increased food production).

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